

E N V I R O N M E N T A L S T U D I E S P R O G R A M

ETOX-P-BSH

SSP ENVIRONMENTAL TOXICOLOGY PROGRAM REQUIREMENTS

2021/2022

Advisor: Dr. Stephen Brown, Biosciences Rm. 3130, email: stephen.brown@chem.queensu.ca	
The four-year B.Sc. (Honours, SSP, Environmental Toxicology) requires a minimum of 120.0 units in total.	
Core and Integrative Science Courses: 72.0 units	Completed
6.0 units in BIOL 102(Intro Biology of Cells) and BIOL 103(Intro Biology of Organisms)	
6.0 units from CHEM 112(General Chemistry)	
6.0 units from GPHY 101(Human Geography) and GPHY 102(Earth System Science)	
3.0 units in GEOL 104 or GEOL 107	
6.0 units from MATH 111; MATH 120; MATH 121; (MATH 123 and MATH 124)	
12.0 units in BIOL 200, BIOL 212, BIOL 205, BIOL 243	
9.0 units in CHEM 213, CHEM 281, and (CHEM 282 or CHEM 285)	
3.0 units in ENSC 201	
3.0 units in CHEM 326	
3.0 units in ENSC 425	
3.0 units in PHAR 416	
3.0 units in ENSC 103(Environment and Sustainability)	
3.0 units in ENSC 390(Sustainability)	
6.0 units from ENSC 430 (Honours Projects in Environmental Sustainability) or ENSC 501 or ENSC 502	
Option Courses: 30.0 units	Completed
3.0 units from GEOL	
3.0 units from ENSC Specialization Options B: BIOL 335(Limnology and Aquatic Ecology), ENSC 201 (Environmental Toxicology and Chemical Risks), ENSC 301(Environmental Assessment), ENSC 307(Marine Environmental Issues), ENSC 320(Wildlife Issues in a Changing World), ENSC 407(Global Water Issues), ENSC 425(Ecotoxicology), ENSC 471(Environmental Analysis Methods), ENSC 480(Special Topics in Environmental Science), GEOL 106(Environmental Geology and Natural Hazards), GEOL 107(History of Life), GEOL 200(Oceanography), GPHY 207 (Principles of Biogeography), GPHY 209(Principles of Hydroclimatology), GPHY 304(Arctic and Periglacial Environments), GPHY 306 (Natural Environmental Change), GPHY 312(Watershed Hydrology), GPHY 314(Climatic Change), GPHY 317(Soil, Environment & Society), GPHY 318(Advanced Biogeography), GPHY 319(Bioenergy & Biorefining)	
3.0 units from ENSC Interdisciplinary Social Science and Humanities: CHEE 342 (Environmental Biotechnology), CLST 214 (Ancient Science), DEVS 220(Intro to Aboriginal Studies), DEVS 221(Topics in Aboriginal Studies), DEVS 250(Global Environmental Transformations), ENSC 200(Environmental History), ENSC 290(Intro. To Ecological Economics) or ECON 290(Intro. to Environmental Economics), ENSC 301 (Environmental Assessment), ENSC 305(Social Environments), ENSC 307(Marine Environmental Issues), ENSC 310(Environmental Policy), ENSC 315(Global Food Security, Agriculture and Environment), ENSC 320 (Wildlife Issues in a Changing World), ENSC321(Environmental Justice), ENSC 407(Global Water Issues), ENSC 420(Gender and Environments), ENSC 482(Special Topics in Environmental Studies), ENSC 483(Special Topics in Environmental Studies II), GPHY 336(Geography, Environment & Human Health), GPHY 339(Medical Geography), PHIL 203 (Science and Society), PHIL 293(Humans and the Natural World), PHIL 310(Development	

Ethics), PHIL 493(Ethics and the Environment), RELS 235(Religion and Environment)	
3.0 units from ENSC Interdisciplinary Humanities: CLST 214(Ancient Science); DEVS 220(Intro to Aboriginal Studies); DEVS 221(Topics in Aboriginal Studies); PHIL 203(Science and Society); PHIL 293(Humans and the Natural World); PHIL 310(Development Ethics); PHIL 493(Ethics and the Environment); RELS 235(Religion and Environment)	
6.0 units from one of Option List i – iii:	
i. Molecular Biology or Cell Biology Option(6.0 units): 6.0 units from BCHM 218/3.0; BIOL 330/3.0; BIOL 334/3.0; BIOL 403/3.0; BIOL 404/3.0; BIOL 430/3.0; BIOL 431/3.0; BIOL 502/3.0; BIOL 506/3.0; BIOL 508/3.0; MICR 360/3.0	
ii. Physiology Option(6.0 units): 6.0 units from BIOL 322/3.0; BIOL 339/3.0; BIOL 341/3.0; BIOL 401/3.0; BIOL 402/3.0	
iii. Ecology Option(6.0 units): 6.0 units from BIOL 300/3.0; (<i>BIOL 302/3.0; BIOL 303/3.0;</i>) BIOL 323/3.0; BIOL 335/3.0; BIOL 410/3.0; BIOL 416/3.0; BIOL 421/3.0; BIOL 509/3.0; BIOL 510/3.0; BIOL 527/3.0	
12.0 units from ETOX Options: BIOL 300(Ecology), (<i>BIOL 302(Population & Evolutionary Ecology), BIOL 303(Community & Ecosystem Ecology)</i>), BIOL 307/317(Field Biology), BIOL 335(Limnology & Aquatic Ecology), BIOL 409(Bioremediation), BIOL 501-536, CHEM 321(Instrumental Chemical Analysis) , ENSC 301(Environmental Assessment), ENSC 307(Marine Environmental Issues), ENSC 320(Wildlife Issues), ENSC 407(Global Water Issues), ENSC 471(Environmental Analysis Methods), ENSC 480(Special Topics–Science), ENSC 481(Special Topics-Science II), ENSC 501(Independent Env. Study), EPID 301(Principles of Epidemiology), GPHY 304(Arctic & Periglacial Environments), GPHY 306(Natural Environmental Change), GPHY 311(Biogeochemical Cycles), GPHY 312(Watershed Hydrology), GPHY 314(Climatic Change), GPHY 317(Soil, Environment & Society), GPHY 336(Geography, Environment & Human Health), GPHY 339(Medical Geography), GEOL 343(Hydrogeology), GEOL 466(Isotopes & the Environment), GEOL 485(Environmental Aqueous Geochemistry), CHEE 342(Environmental Biotechnology), CHEE 484(Bioremediation), CIVL 382(Groundwater)	
Students are strongly advised to complete all requirements for 100 and 200-level courses in their first and second year, paying special attention to prerequisites and corequisites needed in 300 and 400-level courses.	
Electives: 18.0 units STRONGLY RECOMMENDED: PHYS 104, 106 or PHYS 117	